Licensed Electrician's Practical (LEP) Assessment

Sample Paper January 2026

Candidate Surname:			
Candidate Given Names:			
Assessment Venue Location:			
Wiring Bay No.:		**Testing Bay No.:**	
Consumer Mains Installation: (Underground / Overhead)			

Circle the appropriate answer below.

Is the candidate's photo ID valid?	Yes	No
Does the IR tester supplied by candidate meet calibration requirements?	Yes	No
Does the type of IR tester supplied by candidate meet the assessment requirements?	Yes	No

Candidate			
	Print name	Signature	Date
Assessor			
	Print name	Signature	Date

Marks Allocation										Possible	Actual
Q1	Meter Panel and Switchboard Wiring									35	
Q2	Electrical Installation Testing	**2.1**	**2.2**	**2.3**	**2.4**	**2.5**	**2.6**	**2.7**	**2.8**	32	
Q3	MEN System Voltage Measurement	**3.1**				**3.2**				18	
Q4	Visual Defects									15	
									Total:	100	

Final Percentage	Pass/Fail

I have conducted this assessment and certify that I am independent of the candidate.

Assessor			
	Print name	Signature	Date
Reviewed by (If applicable)			
	Print name	Signature	Date

VICTORIA State Government

energysafe VICTORIA

Instructions

- Mobile phone and smart devices are to be switched off, placed in the location designated by the assessor and not used.
- Personal notepads and paper are not permitted.
- Permanent ink pens only must be used. Answers in pencil and/or erasable pens may not be marked.
- Do not remove any sheets from this assessment paper or the room.
- Papers with no name or signature will not be marked.
- A mark will be deducted per section for each missing or incorrect unit where required.
- Reference material listed below. Do not mark, fold, or write on the reference material.
- The assessment may be audio/visually recorded for safety and integrity purposes.
- Speak to the assessor if you require assistance or have a query.

Working Time: 4 hours (including reading time). At the end of this time you will be asked to stop.

This LEP assessment will comprise of four questions. Throughout the assessment, the LEP assessor will instruct you as to which workstation to use, and when to move to them.

Q1	Meter Panel and Switchboard Wiring
Q2	Electrical Installation Testing
Q3	MEN System Voltage Measurements
Q4	Visual Defects

Inform your assessor if any equipment is missing or not available. **DO NOT TAKE ANYTHING FROM ANOTHER WORKSTATION.**

Required Reference Material

- AS/NZS 3000:2018 Electrical installations – Wiring Rules
- AS/NZS 3008.1.1:2017 Electrical installations – Selection of cables, Part 1.1: Cables for alternating voltages up to and including 0.6/1 kV - Typical Australian installation conditions

Optional Reference Material

- AS/NZS 3017:2022 Electrical installations – Verification guidelines
- The Victorian Service and Installation Rules 2025

Results

Candidates need to obtain 75% or more to pass this assessment. If a mark of 74% or less is achieved, a minimum of 14 days is required before you are permitted to re attempt the assessment.

I, the above named candidate confirm:

- I understand the instructions provided to me
- I do not have any unauthorised materials in my possession, and
- I have not attempted the Licensed Electrician's Practical Assessment at any venue within the past 14 days.

Candidate			
	Print name	Signature	Date

Question 1

Wiring Bay No.:	

Meter Panel and Switchboard Wiring

A mark will be deducted for each missing or incorrect unit where required.

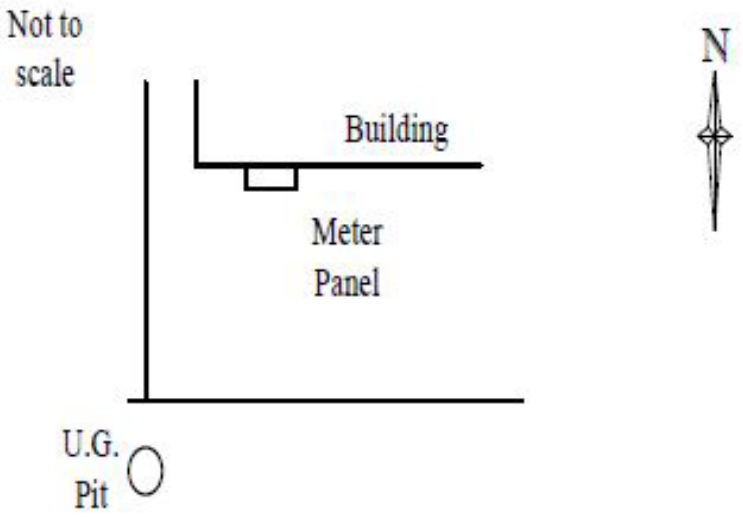
You are required to install a 3Φ 4 wire 400/230V 50Hz air-conditioned school. The installation comprises a 3Φ meter panel and main switchboard in a common enclosure, and a separate 1Φ distribution board. The main switchboard and the distribution board are situated in the same building.

The installation is located at 55 Blyth Road, Williamstown.

The installation will be supplied from:

- ☐ **Overhead supply** - from the fused overhead line connector box to the main switchboard. The consumer's mains are V90 SDI stranded copper cables. The cables are run enclosed in air.
- ☐ **Underground supply** - from the service pit, the cables run underground in PVC conduit at a depth of 500mm. The consumer's mains are V90 SDI stranded copper cables.

The meter panel enclosure is located on the front of the building, 18 meters from the southern property boundary, and 6 metres from the western property boundary. The underground pit is located at the southwest corner of the property.



All wiring and identification are to be carried and completed to the requirements of AS/NZS3000:2018 Wiring Rules. You may ignore voltage drop requirements. Assume unity power factor on all loads. Assume short circuit protection is provided on the supply side of the consumer's mains. All cables installed are solid/stranded and will operate at normal operating temperatures.

You must select and arrange main switches, circuit breakers, RCDs and cables from the equipment provided. Divide the equipment in the installation into final sub-circuits, as per AS/NZS3000:2018 requirements. Select the **minimum** permissible cable size (cables available for final sub-circuits are 1.5mm^2, 2.5mm^2, 4mm^2 and 6mm^2) and correct circuit protective device rating for each circuit.

1.5mm^2 cable is not suitable for socket outlets in this installation.

Do not cut any cables or bus-bar, or take any equipment from another workstation, unless directed by your assessor. Inform your assessor if there is any equipment missing or not provided.

Note: Although Appendix C of AS/NZS3000:2018 Wiring Rules is classed as informative (i.e. for guidance only), Appendix C Tables C1, C2, C5 and C9 may be used in this assessment where appropriate.

Note: AS/NZS3008.1.1 shall be used for all cable selection and cable current ratings.

The installation will comprise of the following:

Equipment installed from the main switchboard:

- 1 – 3Φ 15kW Air-conditioner
- 1 – 1Φ 5.6kW Oven
- 1 – 1Φ 15A Socket Outlet
- 38 – 1Φ 25W Luminaires, installed over two circuits

The following equipment is to be installed from the **distribution board** and controlled by an isolator:

- 1 – 1Φ 2.6kW Storage water heater
- 5 – 1Φ 10A Double socket outlets, installed over two circuits
- 10 – 1Φ 12W LED downlights installed on a single circuit

Note: Use of RCDs and/or RCBOs are permitted.

The 3Φ final sub-circuit wiring is V90 single insulated cable, installed enclosed in the cable duct/conduit provided.

The 1Φ sub-main is V90 single insulated cable, installed enclosed in the cable duct/conduit provided.

All 1Φ final sub-circuit wiring in the installation is two core and earth V90 flat copper TPS, installed partially surrounded in thermal insulation.

Cooking appliance manufacturer's installation instructions do not specify a minimum cable size.

Note: This installation will never be connected to the electrical supply. Some parts and equipment may not satisfy the requirements of AS/NZS3000:2018 and other associated standards, they are only used in the assessment environment to keep assessment costs to a minimum. Please ask your assessor if you have any questions in relation to this.

Calculate the maximum demand of the installation. Use the maximum demand table below for your working.

Maximum Demand Table Used:	

Circuits	Load Group	Calculations	MD		
			Red	White	Blue
1 – 3Φ 15kW Air-conditioner					
1 – 1Φ 5.6kW Oven					
1 – 1Φ 15A Socket Outlet					
38 – 1Φ 25W Luminaires					
Equipment 1Φ Distribution Board					
Circuits	Load Group	Calculations	MD		
			Red	White	Blue
1 – 1Φ 2.6kW storage water heater					
5 – 1Φ 10A Double Socket Outlets					
10 – 1Φ 12W LED downlights					
Distribution Board MD					
Total Installation MD					

Based on the maximum demand calculation, select the current rating of the main switch, the **minimum** size of the consumer's mains cable, and the **minimum** size of the main earth conductor.

Based on the maximum demand calculation, select the current rating of the distribution board isolator and the **minimum** size of the sub-mains cable.

Enter these details into the table below, and state the AS/NZS 3008.1.1 Table number and column number used for your cable selection:

Consumer's Mains	Table	Column
Sub-mains	Table	Column
Three phase load	Table	Column
Single phase loads	Table	Column

Maximum Demand of the Installation	Current Rating of the Main Switch	Size of the Consumer's Mains Cable		Size of the Main Earth Conductor	
		O/head	U/G	O/head	U/G

Maximum Demand of the Distribution Board	Current Rating of the Distribution Board Sub-main Circuit Protection	Size of the Sub-main Cable

[Question 1 = 35 marks]

Question 2

Testing Bay No.:	

Electrical Installation Testing

A mark will be deducted for each missing or incorrect unit where required.

Using your insulation resistance and continuity tester, carry out the following tests, as required under AS/NZS3000:2018, on the electrical installation indicated by the assessor.

NEUTRAL CONDUCTORS MUST NOT BE DISCONNECTED.

Insert the meter readings with the correct units, and other information as required, in the appropriate places throughout question 2.

2.1 Resistance of Main Earth and Bonding Conductors

Test	Record Instrument Reading and Units	Indicate if Test is Pass or Fail
Main Earthing Conductor		
Bonding conductor to water pipe		

[1 + 1 = 2 marks]

2.2 Insulation Resistance of Wiring

Circuit Test	Record Instrument Reading and Units	Indicate if Test is Pass or Fail
Whole Installation (wiring only)		
Final sub-circuit 1		
Final sub-circuit 2		
Final sub-circuit 3		
Final sub-circuit 4		

[5 x 2 = 10 marks]

2.3 Earthing and Insulation Resistance of Appliance

Test	Record Instrument Reading and Units	Indicate if Test is Pass or Fail
Earthing of Exposed Metal		
Insulation Resistance		

[1 + 2 = 3 marks]

2.4 Resistance of Protective Earthing Conductors

Determine Pass or Fail using Table 8.2 of AS/NZS3000:2018 Wiring Rules

Test	Active Cond. Size mm^2	Earth Cond. Size mm^2	Protective Device Rating Type C	Active Cond. Resistance (R_{ph}) (Given)	R_e Value and Units (Measured)	R_{phe} Value and Unit (Calculated)	Indicate if Test is Pass or Fail
Ceiling Rose	$1.5mm^2$	$1.5mm^2$	10A	0.60 Ω			
Fluorescent Light	$1.5mm^2$	$1.5mm^2$	10A	0.50 Ω			
Socket Outlet 1	$2.5mm^2$	$2.5mm^2$	16A	0.20 Ω			
Socket Outlet 2	$2.5mm^2$	$2.5mm^2$	20A	0.30 Ω			

[4 x 1 = 4 marks]

2.5 Polarity Test of Consumer's Mains

Test	Record Instrument Reading and Units	Indicate if Test is Pass or Fail
Consumer's Mains Active		
Consumer's Mains Neutral		

[1 +1 = 2 marks]

2.6 Operation of Switches

Switch Under Test	Indicate which conductor is being switched ACTIVE / NEUTRAL / NEITHER	Indicate if Test is a Pass or Fail
Ceiling Rose		
Fluorescent Light		
Socket Outlet 1		
Socket Outlet 2		
Fan Socket Outlet		

[5 x 1 = 5 marks]

2.7 Testing of Circuit for Automatic Disconnection of Supply

Measure the fault loop impedance of the final sub-circuit supplying the socket outlet listed in the table below.

The final sub-circuits are protected by Type C miniature circuit breakers. The nominal supply voltage of the electrical installation is 230 volts.

Complete the table below, and determine Pass or Fail using Table 8.2 of AS/NZS3000:2018 Wiring Rules

Test Point	Conductor Size		Type C Circuit Breaker Rating	Measured Value and Units	Value of R_{phe} and Units From T8.2	Indicate if Test is a Pass or Fail
	Active mm^2	Earth mm^2				
Appliance socket outlet	2.5 mm^2	2.5 mm^2				

[2 marks]

2.8 Testing of Operation of RCDs

Using the RCD tester provided, test the three (3) RCD's and record their trip time and trip current at zero degrees.

RCD Under Test	Earth Leakage	
	Trip Time Value and Units	Trip Current Value and Units
1		
2		
3		

[1 + 1 + 1 = 3 marks]

In a residential installation with only two lighting circuits, is it permissible to protect both lighting circuits with a single RCD?

Answer:	
Wiring Rules Clause Number:	

[1 mark]

[3 + 1 = 4 marks]

Question 3

MEN System Voltage Measurements

A mark will be deducted for each missing or incorrect unit where required.

The equipment on this test panel consists of:

- The earth electrode from the 400/230V distribution system substation MEN star point.
- A single phase electrical installation with earth electrode and bonding to a metallic underground water pipe.

Using the instrument provided, carry out the following tests. On the simulated MEN electrical installation, you are required to take voltage measurements, as follows:

Question 3.1

i. With the main switch "ON" and all circuit breakers in the "OFF" position, take a voltage measurement across the terminals of the point of supply.

ii. Measure the voltage between the:

- independent earth and frame of the appliance (refrigerator)
- independent earth and water tap/pipe
- appliance terminals

in each of the switchboard conditions outlined in the table below.

The main switch is to be in the "ON" position in all cases.

On the following page:

a) Record the voltage readings and units and write them in the table.

b) Answer the two questions in relation to your readings.

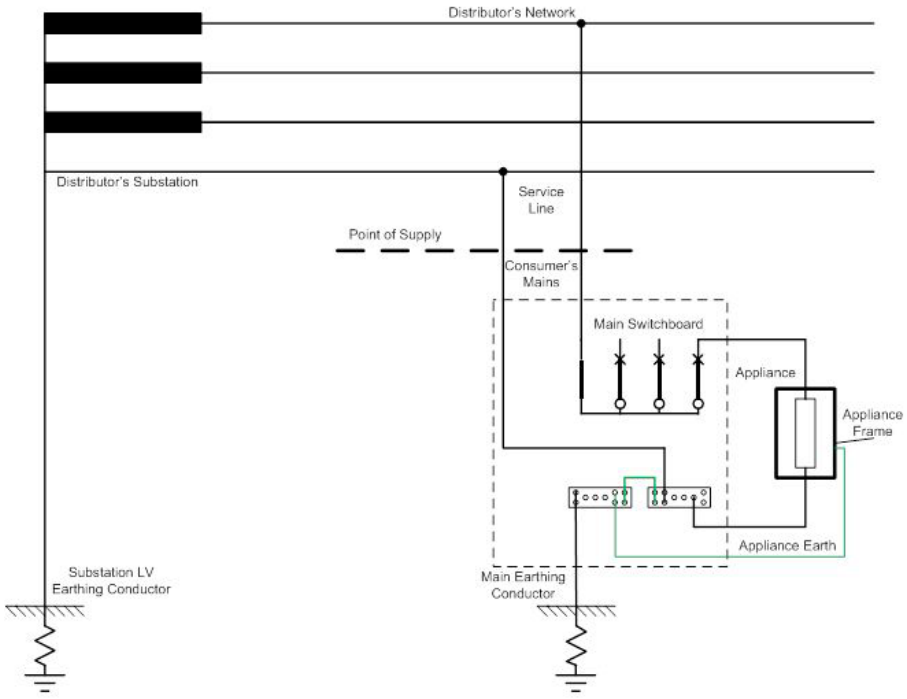
c) Draw the current path, and the location of the fault (if any) on the diagram supplied.

Measure and record the supply voltage at the point of supply (Main switch on, all circuit breakers off)				_____ **Volts**		
Test Condition	**Circuit Breaker 1**	**Circuit Breaker 2**	**Circuit Breaker 3**	**Independent Earth and Appliance Frame (refrigerator)**	**Independent Earth and Water Tap/Pipe**	**Appliance Terminals (refrigerator)**
1	**ON**	**Off**	**Off**			
2	**ON**	**ON**	**Off**			
3	**ON**	**ON**	**ON**			

Is the electrical installation you have measured above safe? Yes / No

Draw the current path of your measured circuit on the diagram below and indicate on the diagram the location of the fault (if any). Indicate if you have drawn a:

High impedance circuit / Open circuit / No fault circuit (Cross out those not applicable.)



[3 + 1 + 2 + 4 = 10 marks]

Question 3.2

Answer the following four (4) questions about the MEN system.

Note: These questions do not relate to your measurements or diagram on the previous page.

Questions 1 and 2 are in relation to the following scenario:

You are running single-phase sub-mains to an outbuilding from a main switchboard. The distribution board is to be supplied with active and neutral conductors.

No protective earthing conductor is being installed:

1. Select the correct statement.

a) An MEN link and earth electrode **must** be installed at the distribution board.
b) An MEN link must be installed but not an earth electrode.
c) An MEN link and earth electrode must NOT be installed at the distribution board.
d) Given the supplied equipment, this installation would be non-compliant.

2. Select the correct statement.

a) The installation described in non-compliant. All installations that include sub-mains require an earthing conductor.
b) In an active to earth fault, current flows through the protective earth to the MEN link and then through the sub-main neutral.
c) Without a protective earthing conductor, fault current will return to supply through the ground.
d) The installation described is best defined as an 'isolated supply'.

Questions 3 and 4 are in relation to the following scenario:

You have been called to an installation where a customer has reported that appliances are not operating correctly, and they are feeling a tingling sensation when touching metal appliances around the home.

It is a domestic installation with an overhead supply that you cannot easily access due to foot traffic. When you visually inspect the main switchboard, it appears in a satisfactory state. You isolate the supply and ensure that all terminals in the switchboard are secure.

Upon re-energising the installation, you notice incandescent lights are dim, flickering and LED downlights will not light up.

You have taken the following voltage readings.

- Main switchboard: active to neutral & earth bar – **103V**
- Resistive cooktop: active to neutral – **100V**
- Light switch: active to neutral – **90V**
- Electric water heater: active to neutral – **108V**
- Independent earth to main switch active – **230V**
- Independent earth to neutral & earth bar – **127V**

3. The tingling sensation (shock) would be caused by:

    a) Static electricity due to copper pipe not being bonded correctly.
    b) A touch voltage between accessible earthed conductive parts.
    c) An incorrect polarity.
    d) An overvoltage of supply.

4. Given that you have done a visual inspection and checked terminations in the main switchboard and the fault is still present, your next step would be to:

    a) Replace the consumer mains.
    b) Replace the MEN link and protective devices.
    c) Rewire all circuits showing unexpected readings.
    d) Report the fault to the supply company.

[2 + 2 + 2 + 2 = 8 marks]

Question 4

Your workstation to inspect is:	

Visual Defects

When instructed by the assessor, carry out a visual inspection of the installation.

You are to find five (5) installation defects and record them in the table below. **A maximum of three (3) defects may be taken from the switchboard enclosure.**

- Record five **different** instances of non-compliance with the Wiring Rules AS/NZS3000:2018.
- Record the defect in the column provided. (1 mark)
- Record the complete Wiring Rules Clause. (2 marks)
- Indicate the switch or socket outlet number and panel location when recording the defect.
- Only the first five recorded defects will be marked.

Panel Location	Wiring Defect	Wiring Rules Clause Number

[5 x (1 + 2) = 15 marks]